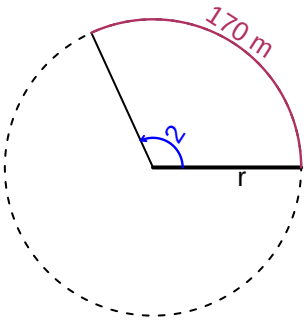
Name: Date:

Trig Final (Practice v0)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

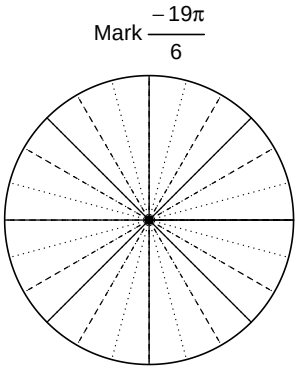
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 2 radians. The arc length is 170 meters. How long is the radius in meters?

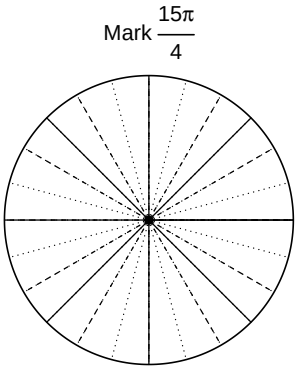


Question 2

Consider angles $\frac{-19\pi}{6}$ and $\frac{15\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-19\pi}{6}\right)$ and $\sin\left(\frac{15\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-19\pi/6)$



Find $\sin(15\pi/4)$

Question 3

If $\tan(\theta) = \frac{-12}{5}$, and θ is in quadrant II, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 7.02 meters, a midline at $y = -4.66$ meters, and a frequency of 8.94 Hz. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

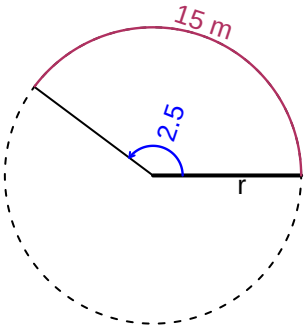
Name: Date:

Trig Final (Practice v1)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

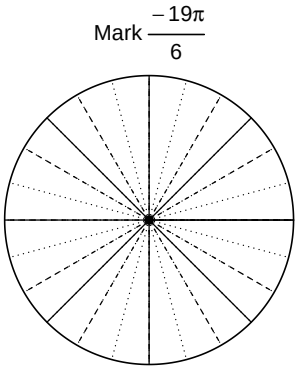
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 2.5 radians. The arc length is 15 meters. How long is the radius in meters?

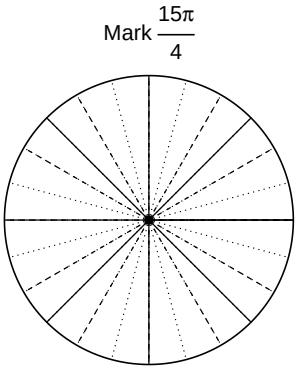


Question 2

Consider angles $\frac{-19\pi}{6}$ and $\frac{15\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-19\pi}{6}\right)$ and $\sin\left(\frac{15\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-19\pi/6)$



Find $\sin(15\pi/4)$

Question 3

If $\tan(\theta) = \frac{-12}{5}$, and θ is in quadrant II, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with an amplitude of 7.02 meters, a midline at $y = -4.66$ meters, and a frequency of 8.94 Hz. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

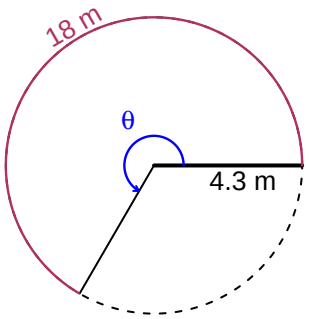
Name: Date:

Trig Final (Practice v2)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

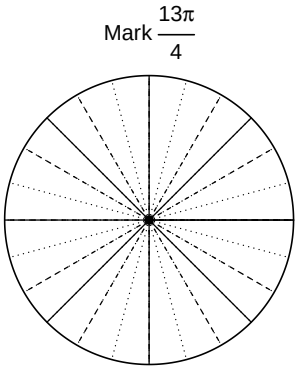
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 18 meters. The radius is 4.3 meters. What is the angle measure in radians?

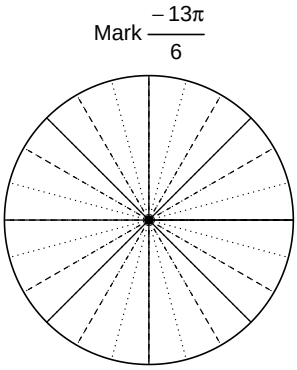


Question 2

Consider angles $\frac{13\pi}{4}$ and $\frac{-13\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{13\pi}{4}\right)$ and $\cos\left(\frac{-13\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\sin(13\pi/4)$



Find $\cos(-13\pi/6)$

Question 3

If $\cos(\theta) = \frac{-16}{65}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -6.63$ meters, a frequency of 2.52 Hz, and an amplitude of 5.11 meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

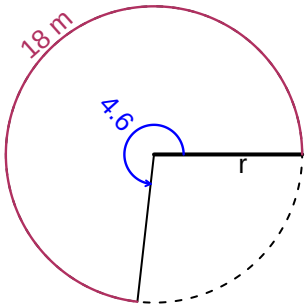
Name: Date:

Trig Final (Practice v3)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

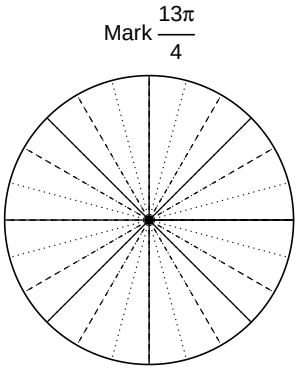
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 18 meters. The angle measure is 4.6 radians. How long is the radius in meters?

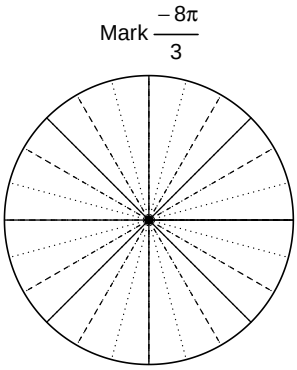


Question 2

Consider angles $\frac{13\pi}{4}$ and $\frac{-8\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{13\pi}{4}\right)$ and $\sin\left(\frac{-8\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\cos(13\pi/4)$



Find $\sin(-8\pi/3)$

Question 3

If $\sin(\theta) = \frac{60}{61}$, and θ is in quadrant II, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 3.66 Hz, a midline at $y = -7.54$ meters, and an amplitude of 2.65 meters. At $t = 0$, the mass is at the midline and moving up. Write an equation to model the height (y in meters) as a function of time (t in seconds).

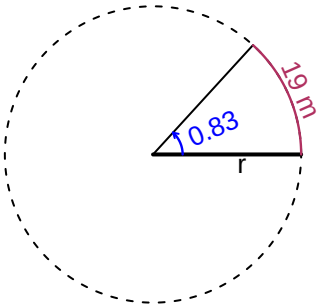
Name: Date:

Trig Final (Practice v4)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

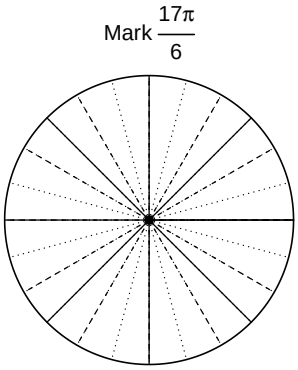
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 0.83 radians. The arc length is 19 meters. How long is the radius in meters?

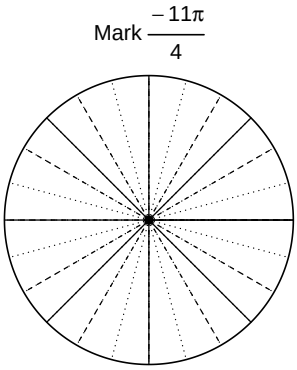


Question 2

Consider angles $\frac{17\pi}{6}$ and $\frac{-11\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{17\pi}{6}\right)$ and $\sin\left(\frac{-11\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(17\pi/6)$



Find $\sin(-11\pi/4)$

Question 3

If $\sin(\theta) = \frac{-72}{97}$, and θ is in quadrant III, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -7.33$ meters, an amplitude of 6.09 meters, and a frequency of 8.74 Hz. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

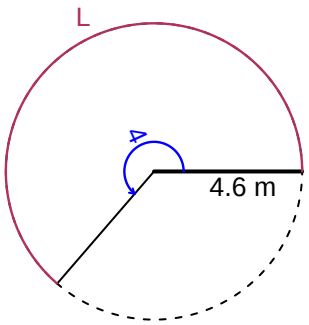
Name: Date:

Trig Final (Practice v5)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

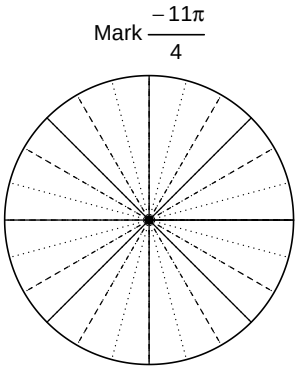
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 4.6 meters. The angle measure is 4 radians. How long is the arc in meters?

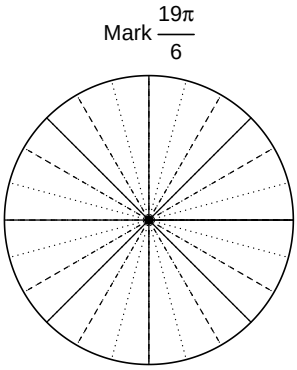


Question 2

Consider angles $\frac{-11\pi}{4}$ and $\frac{19\pi}{6}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{-11\pi}{4}\right)$ and $\cos\left(\frac{19\pi}{6}\right)$ by using a unit circle (provided separately).



Find $\sin(-11\pi/4)$



Find $\cos(19\pi/6)$

Question 3

If $\tan(\theta) = \frac{-56}{33}$, and θ is in quadrant IV, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 2.42 Hz, a midline at $y = 3.93$ meters, and an amplitude of 5.11 meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

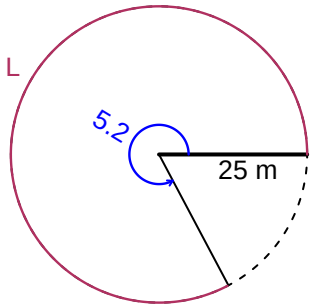
Name: Date:

Trig Final (Practice v6)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

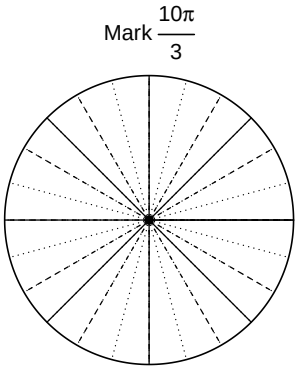
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The angle measure is 5.2 radians. The radius is 25 meters. How long is the arc in meters?

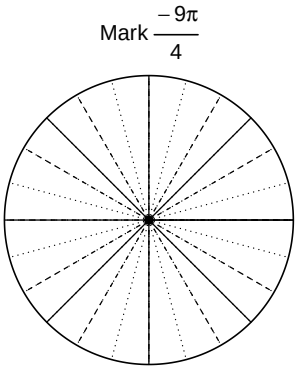


Question 2

Consider angles $\frac{10\pi}{3}$ and $\frac{-9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{10\pi}{3}\right)$ and $\sin\left(\frac{-9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(10\pi/3)$



Find $\sin(-9\pi/4)$

Question 3

If $\tan(\theta) = \frac{-55}{48}$, and θ is in quadrant IV, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a frequency of 6.9 Hz, an amplitude of 3.03 meters, and a midline at $y = -8.71$ meters. At $t = 0$, the mass is at the minimum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).

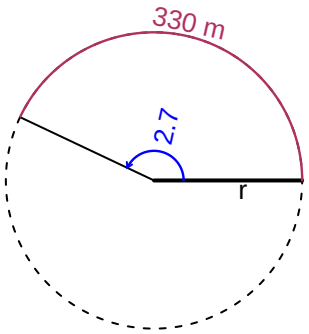
Name: Date:

Trig Final (Practice v7)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

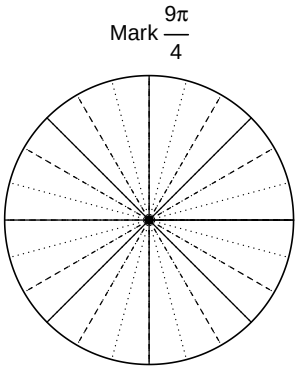
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 330 meters. The angle measure is 2.7 radians. How long is the radius in meters?

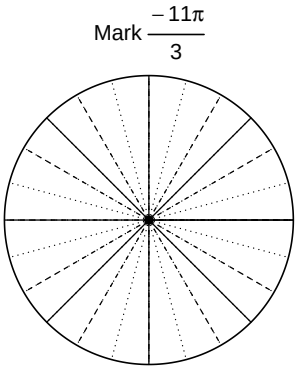


Question 2

Consider angles $\frac{9\pi}{4}$ and $\frac{-11\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{9\pi}{4}\right)$ and $\sin\left(\frac{-11\pi}{3}\right)$ by using a unit circle (provided separately).



Find $\cos(9\pi/4)$



Find $\sin(-11\pi/3)$

Question 3

If $\cos(\theta) = \frac{-11}{61}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = 6.76$ meters, a frequency of 4.54 Hz, and an amplitude of 8.8 meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

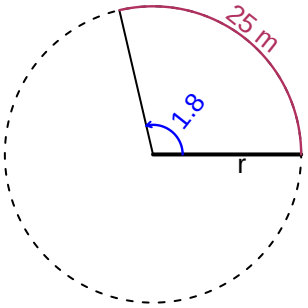
Name: Date:

Trig Final (Practice v8)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

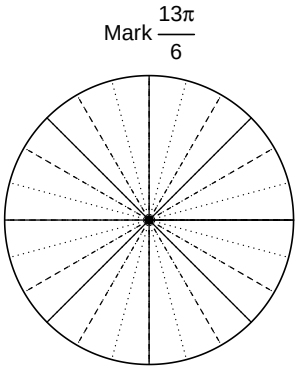
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 25 meters. The angle measure is 1.8 radians. How long is the radius in meters?

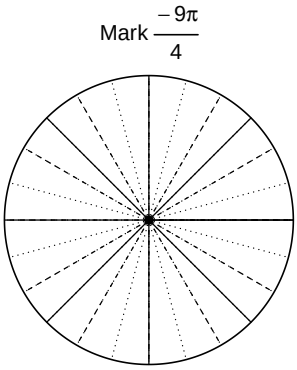


Question 2

Consider angles $\frac{13\pi}{6}$ and $\frac{-9\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\sin\left(\frac{13\pi}{6}\right)$ and $\cos\left(\frac{-9\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\sin(13\pi/6)$



Find $\cos(-9\pi/4)$

Question 3

If $\cos(\theta) = \frac{20}{29}$, and θ is in quadrant IV, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -6.28$ meters, a frequency of 2.68 Hz, and an amplitude of 8.84 meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).

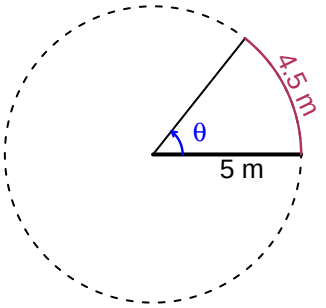
Name: Date:

Trig Final (Practice v9)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

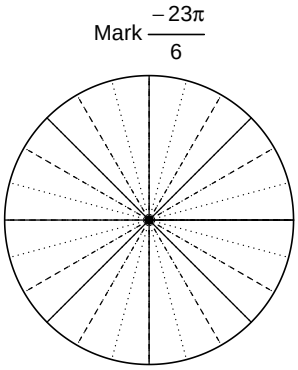
Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The radius is 5 meters. The arc length is 4.5 meters. What is the angle measure in radians?

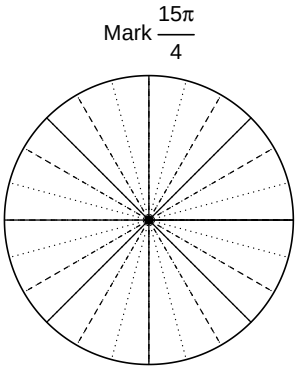


Question 2

Consider angles $\frac{-23\pi}{6}$ and $\frac{15\pi}{4}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{-23\pi}{6}\right)$ and $\sin\left(\frac{15\pi}{4}\right)$ by using a unit circle (provided separately).



Find $\cos(-23\pi/6)$



Find $\sin(15\pi/4)$

Question 3

If $\cos(\theta) = \frac{-12}{37}$, and θ is in quadrant III, determine an exact value for $\tan(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = -5.28$ meters, a frequency of 8.81 Hz, and an amplitude of 3.4 meters. At $t = 0$, the mass is at the maximum height. Write an equation to model the height (y in meters) as a function of time (t in seconds).